# Addressing Nutrient Pollution

Internal deliberative pre-decisional

## ISSUE SUMMARY:

The presence of excess nutrients in waterways is a widespread and costly environmental and public health challenge. Excess nutrients such as phosphorous and nitrogen can degrade water quality, feed harmful algal blooms, and affect drinking water sources. These problems can lead to costly impacts on recreation, drinking water, tourism, and fisheries.

## UPCOMING MILESTONES:

- **Fall 2020**: Finalize a revised policy statement on water quality trading baselines for nonpoint sources of pollution in watersheds where EPA established or approved state Total Maximum Daily Loads (TMDL).
- **December 2020**: EPA has several impending deliverables:
  - Issue technical guidance for determining the boundaries for market-based programs like water quality trading on a watershed scale.
  - Publish a *Compendium of State and Regional National Pollutant Discharge Elimination System (NPDES) Nutrient Permitting Approaches*, compiling examples of state and regional approaches to traditional nutrient control, performance-based approaches, water quality trading; and watershed-based permitting.
  - Request comments on a proposed rule to clarify NPDES permitting authorities for market-based approaches (such as water quality trading) via permit conditions.
  - Publish the draft "Harmful algal blooms or hypoxia event of national significance (HHENS)" policy for public comment.
  - Finalize numeric nutrient water quality criteria recommendations for lakes and reservoirs.
- **Spring 2021:** Co-chair with the State of Iowa the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force (Hypoxia Task Force, or HTF) on improving water quality within the Mississippi River Basin.

## BACKGROUND:

Excess nutrients in waterways contribute to harmful algal blooms (HABs) in surface waters that can release toxins and pose risks to human health and the environment. In August 2014, a HAB contaminated the drinking water supply of Toledo, Ohio, with levels of cyanotoxins in finished drinking water that led to a weekend-long "do-not-drink" advisory. A similar 2018 event in Salem, Oregon, led to a "do-not-drink" advisory for vulnerable populations lasting several weeks. Major blooms were also reported in the Ohio River in 2015, in Utah lakes in 2016, and there have been multiple large annual blooms in Florida and other locations since 2016. Excess nutrients also contribute to hypoxic (low oxygen) zones, across the country, including the large dead zone at the mouth of the Mississippi River.

Due to the success of EPA's work to reduce point source discharges of nutrients through the Clean Water Act (CWA) regulatory programs, the most significant remaining opportunity to reduce excess nutrients in water comes from nonpoint sources. Because EPA does not have regulatory authority over nonpoint sources of pollution, partnerships and collaboration with states, tribes and stakeholders are critical to making sustained progress. To this end, as recognized in the October 2020 Executive Order on Modernizing America's Water Resources Management and Water Infrastructure, the agency is investing significant time, effort and energy into non-regulatory, market-based, geographically-based and community-driven approaches. For example, in February 2019, EPA issued a new water quality trading policy that reiterates EPA's strong support for water quality trading and other market-based programs, provides additional guidance to states, tribes, and stakeholders regarding the use of market-based programs to reduce water pollution at lower overall cost, and incentivizes implementation of technologies and land use practices that reduce nonpoint pollution in our Nation's water.

Collaboration with the U.S. Department of Agriculture (USDA) is essential to success in controlling nonpoint source pollution from farms and other agricultural sources. That is why EPA and USDA issued a letter in December 2018 to state co-regulators encouraging a reinvigoration of state, tribal, and federal efforts to reduce excess nutrients in waterways, with a focus on market-based and other collaborative approaches. Through the National Water Quality Initiative, EPA and USDA accelerate adoption of high-impact conservation practices, and cooperate on other Farm Bill conservation programs, including USDA's Regional Conservation Partnership Program. Additionally, EPA is working alongside state and utility associations, non-governmental organizations, federal agencies (including USDA) and other partners through the national Source Water Collaborative that supports effective source water protection strategies to reduce and prevent the occurrence of nutrient pollution, HABs and cyanotoxins in drinking water sources. EPA has also initiated a partnership program with the animal agriculture industry to enhance water quality protection through voluntary collaborations, including a Nutrient Recycling Challenge competition to develop affordable technologies to recycle nutrients from livestock manure and generate products that farmers can use or sell. In addition, EPA signed a Memorandum of Understanding with the Water Research Foundation in February 2019 to facilitate collaboration between the regulated water community, technology developers and providers, and agricultural producers; demonstrate innovative manure and nutrient management technologies; enable producer-to-producer information exchange regarding technology performance; and develop and disseminate information on manure management and resource recovery and reuse.

Partnerships are also in place through Hypoxia Task Force (HTF) and EPA's National Estuary Program (NEP) to improve the waters and habitats in the Mississippi/Atchafalaya River Basin and the 28 designated estuaries of national significance. In 2019 and 2020, EPA awarded a total of $2.4 million to the HTF states to assist with implementation of state nutrient reduction strategies. EPA also updated its HTF website and created a new quarterly newsletter to report on HTF state and federal partner progress and announcements. Working with 1,600 public and private sector partners, including over 100 state agencies, NEPs use non-regulatory, outcome-based programs to improve and protect water quality and address nutrient pollution. The NEPs target both point and nonpoint sources of nutrient pollution. In addition, , hundreds of millions of dollars have been allocated since 2010 through the Great Lakes Restoration Initiative for projects to reduce nutrients in the Great Lakes. For example, in February 2020, the agency awarded more than $1.8 million in Great Lakes Restoration Initiative (GLRI) grants to five organizations that will use market-based approaches to enhance nonpoint source excess nutrient reduction efforts in the Great Lakes basin. And EPA's Gulf of Mexico Division awarded more than $9.5 million in Farmer to Farmer Cooperative Agreements to fund farmer led projects that improve water quality, habitat and environmental education in the Gulf of Mexico watershed, and has a new RFA that closes in mid-October 2020 to fund up to $10 million in new projects.

Currently, more than 15,700 TMDLs have been established for nutrient-related pollution, primarily by states, for more than 11,300 waters, and 45 states identified nutrients as a priority for development of TMDLs, alternative restoration plans or protection approaches. To assist states in establishing protective standards for their waters, in May 2020, EPA published draft numeric nutrient water quality criteria for lakes and reservoirs. These criteria represent the latest scientific knowledge of the concentrations of nitrogen and phosphorus that are protective of drinking water sources, recreational uses and aquatic life in lakes and reservoirs. Also, in May 2019, EPA issued final national recommended recreational ambient water quality criteria or swimming advisories for two algal toxins for human health protection while swimming or participating in other recreational activities in and on the water. These publications are coupled with the provision of direct technical assistance through a program called N-STEPS program (Nutrient Scientific Technical Exchange Partnership & Support).

Mandated by the 2015 Drinking Water Protection Act, in November 2015, EPA submitted to Congress the *Algal Toxin Risk Assessment and Management Strategic Plan for Drinking* Water, a plan for assessing and managing risks associated with algal toxins in drinking water systems. EPA continues to make progress on the short- and long-term activities identified in the plan, including the development and deployment of a suite of tools for drinking water utilities, state and tribal partners to use to effectively implement cyanotoxin monitoring, treatment and risk communication approaches; the development of factsheets discussing funding opportunities; and the creation of new analytical methods. In 2018, EPA worked with public water systems to implement the first national finished drinking water monitoring effort for cyanotoxins under the fourth Unregulated Contaminant Monitoring Rule (UCMR 4). And, in September 2019, EPA requested public comment to inform the development of a policy with National

Oceanic and Atmospheric Administration for determining if a HAB or hypoxia event in freshwater is an "event of national significance" (per HABHRCA amendments).

In partnership with stakeholders, EPA is conducting a National Study of Nutrient Removals and Secondary Technologies designed to document, and make available to the public, data on means of achieving nutrient removals at publicly owned treatment works through optimizing existing secondary treatment facilities as opposed to installing expensive tertiary treatment systems. EPA is also carrying out a detailed study of the Meat and Poultry Products (MPP) Effluent Limitation Guidelines (ELGs) to evaluate whether those ELGs should be updated to address nutrient discharges from that category of point source dischargers.

## KEY EXTERNAL STAKEHOLDERS:

☒ Congress ☒ Industry ☒States ☒ Tribes ☒ Media ☒ Other Federal Agency

☒ NGO ☒ Local Governments ☒ Other (name of stakeholder) Agriculture, USDA

## MOVING FORWARD:

- Revise and publish a final technical support document for states and authorized tribes interested in adopting the cyanotoxin recreational criteria into their standards.
- Publish a draft technical support document for states and authorized tribes interested in adopting and implementing EPA's final national recommended nutrient criteria for lakes and reservoirs.
- Implement nutrient provisions in the Executive Order on Modernizing America's Water Resource Management and Water Infrastructure, including continuing to co-chair the HTF and support state implementation of nutrient reduction strategies, implementing the Great Lakes Restoration Initiative Action Plan III, and promoting market-based mechanisms to improve water quality.
- Highlight agricultural-municipal case studies that utilize innovative financing approaches to help educate stakeholders on the use of federal and private sector funding to reduce nutrient pollution.
- Expand the partnership between the Clean Water State Revolving Fund (CWSRF) and the CWA 319 Program to support the expansion of eligibilities and funding for nutrient pollution control projects.
- Support the Water Environment Federation (WEF) *Nutrient Smart (NSmart)*, a program for wastewater utilities focused on reducing nutrient loads to waters.
- Expand the use of NEP watershed-based partnerships to develop and implement nutrient management programs in all coastal states.
- Continue to conduct critical research on nutrients and HABS.

LEAD OFFICE/REGION: OW

OTHER KEY OFFICES/REGIONS: ORD, GREAT LAKES NATIONAL PROGRAM, ALL EPA REGIONS